

Review Article

CONQUERING LEPROSY - ACHIEVEMENTS OF NATIONAL LEPROSY ERADICATION PROGRAMME WITH EXPERIENCE AT NATIONAL AND STATE LEVEL

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ABSTRACT

The study was carried out with the intention of describing the progress made by NLEP in India over decades. The study is a retrospective record based study based on data published by NLEP in National and state level reports as well as data published in WHO bulletin. There was decline in new cases of leprosy detected yearly. The prevalence rate has dropped from 4.2 in 2002 to 0.68 per 10000 in 2012¹. The proportion of children among new cases in year 2011-12 was which was 9.7%. Patients with visible deformity were 3%.¹ On final day of 2005, India achieved its goal of elimination of leprosy as a public health problem.²

Key words: Leprosy, NLEP, retrospective

INTRODUCTION

Leprosy is one of the oldest disease known to mankind. Its exact origin and prevalence cannot be determined but it was prevalent in ancient civilizations like Egypt (and other parts of Africa), China and India. It finds mention in Bible. Some of the oldest Indian medical texts and treatise-such as writings of Charaka, Sushruta and Vagbhata- discuss it in detail.²

Leprosy (Hansen's disease) is a chronic infectious disease caused by *Mycobacterium leprae*.

Over the centuries, victims of leprosy had to encounter stigma, abuse and ostracism.² If leprosy was a social challenge, it was also one to medical science.² The only known treatment in India was with the use of chaulmoogra oil.² In 1873, the Norwegian medical researcher Gerhard Hansen identified *mycobacterium leprae* as the agent causing leprosy. The first skirmish had been won.² In 1943 came another breakthrough when

Dapsone, an effective medicine against *M. leprae*, was introduced.² In 1991, WHO and its Member States committed themselves to eliminate leprosy as a public health problem by the year 2000, elimination being defined as prevalence < 1 case per 10 000 population.³ This target was achieved on time and the widespread use of MDT reduced the disease burden dramatically.⁴

In India, the National Leprosy Control Programme (NLCP) has been in operation since 1955. In 1980 Government of India declared its resolve to "eradicate" leprosy by the year 2000 and constituted working group accordingly. The working group submitted its report in 1982 and recommended revised strategy based on Multi drug chemotherapy for leprosy eradication.¹

It once affected every continent and it has left behind a terrifying image in history and human memory - of mutilation, rejection and exclusion from society.⁵

METHODS

It is a retrospective record based study based on data obtained from NLEP reports published at national and state level ,WHO bulletin on leprosy,WHO Weekly epidemiological record. The indicators used were mainly those reported by the program. They are: prevalence rate, case detection rate, proportion of multi bacillary patients among new cases, proportion of Grade 2 disability among new cases and proportion of children among new cases. The prevalence and case detection rates are expressed per 10,000 populations, while all other proportions are in percentages. Important landmarks in India’s journey toward leprosy elimination were documented.The figures at national level indicating the trend from the year 1993 to 2012 were reported ⁶. Karnataka state was taken to represent the situation at state level and based on data available the progress was reported from the year 1995 to 2012⁷. Recent NLEP report (2012-13)⁸ showing statistics at country and state (Karnataka state) level was included.

RESULTS

The year 2012-13 started with 0.83 lakh leprosy cases on record as on 1st April 2012, with PR 0.68/10,000. Till then 33 States/ UTs had attained the level of leprosy elimination. A total of 542 districts (84.7%) out of total 640 districts also achieved elimination by March 2012.

Following figure shows changes in Prevalence Rate(PR) and ANCDR since 1993 -94 in relation to five MLEC conducted till the elimination achieved in December 2005.

As it can be seen from this graph that the number of new cases went up each year till 1998-99.After that there was a slight decline for next two years. Prevalence was almost static in this period and only slight fall was seen in 2000-01.

An independent evaluation was carried out in 2000 seemed to suggest so: “The vertical strategy employed by NLEP, which might have been appropriate until a few years ago,has now become outdated for reaching the level of elimination of leprosy as a public health problem .”

Fig.1 -Trends in prevalence and new case detection from the year 1993 to 2005²

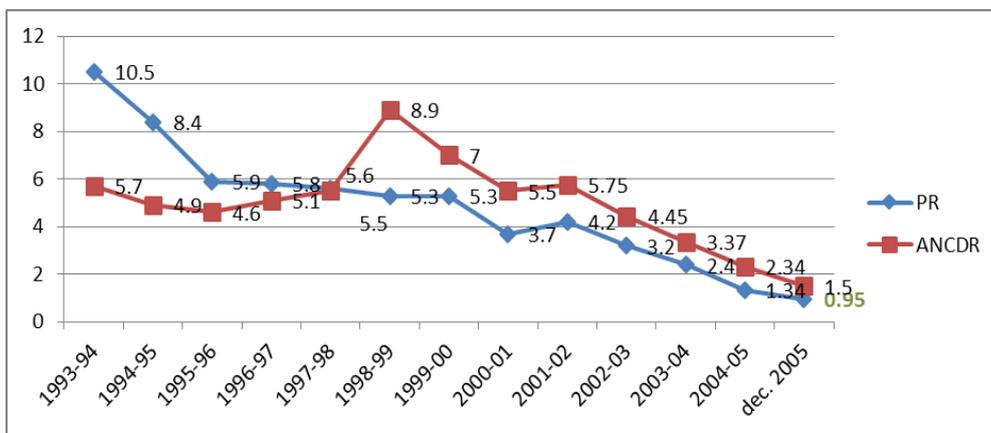
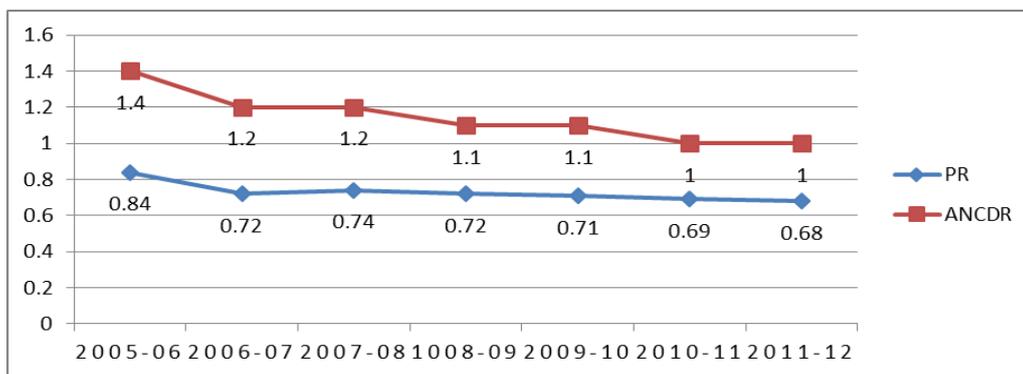


Fig.2:- Trend of leprosy Prevalence (PR) and Annual New Case Detection (ANCDR) from the year 2005-06 to 2011 -12 at Country level⁶



The programme was called upon to change. When second phase of leprosy elimination was drawn up, it was recognized that integration of leprosy services into the general health care system was inevitable.

Following integration, service delivery to leprosy patients improved. Both case detection and prevalence showed steady fall, year after year. This was despite campaigns like MLEC, SAPEL and LEC which sought to identify "hidden cases". Second accessibility to patient treatment centers had increased, as had voluntary reporting of cases.

Trend of leprosy Prevalence (PR) and Annual New Case Detection (ANCDR) from 2005 to 2012 are indicated in the graph.

Based on the reports received from all the states and UTs for the year of 2012-13 current leprosy situation in the country is as below⁸.

1. A total of 1.35 lakh new cases were detected during the year 2012-13, which gives Annual

New Case Detection Rate (ANCDR) of 10.78 per 100,000 population. This shows increase in ANCDR of 4.15% from 2011-12 (10.35).

2. A total of 0.92 lakh cases are on record as on 1st April 2013, giving a Prevalence rate (PR) of 0.73 per 10,000 population.

3. Detailed information on new leprosy cases detected during 2012-13 indicates the proportion of MB (49.92%), Female (37.72%), Child (9.93%), Visible Deformity (3.45%), ST cases (17.01%) and SC cases (18.49%).

4. A total of 4650 Gr. II disability detected amongst the New Leprosy Cases during 2012-13, indicating the Gr. II Disability Rate of 3.72 / million population. In addition 5175 Gr. I cases were recorded which indicates the rate of 4.14 / million population.

5. A total of 13387 child cases were recorded, which shows the Child Case rate of 1.07 / 100,000 population.

Fig. 3:-Epidemiological trend in Prevalence rate in Karnataka state from 1993 to 2012⁷

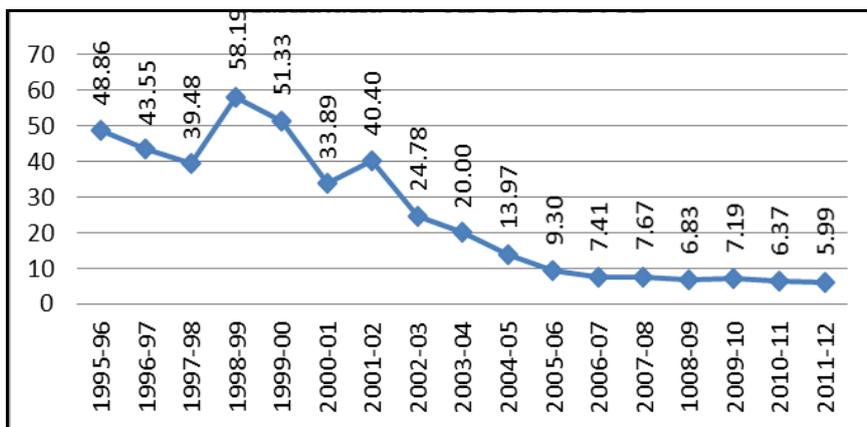
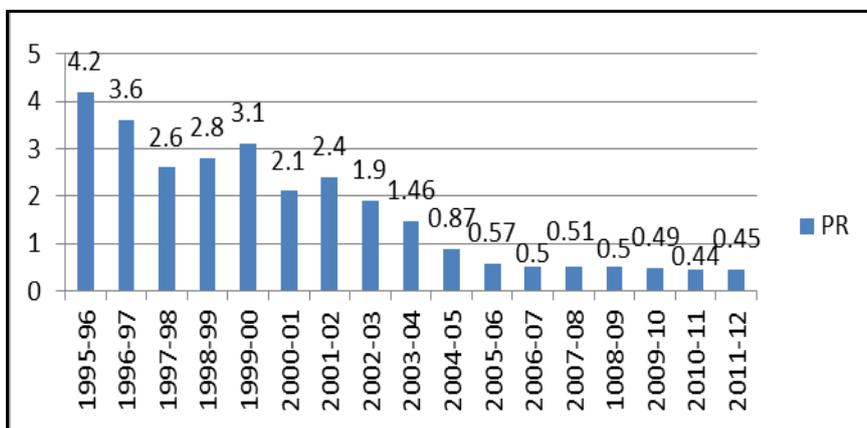


Fig.4- Epidemiological trend in PR in Karnataka state from 1995 to 2012⁷



Status in the Karnataka state

Karnataka is a state in the southern part of India. Population of Karnataka state as on March 2013 was 62941156(5.04% of country's population).According to the NLEP - Progress Report for the year 2012-13, number of cases on record were 2789 which accounts for 3.04% of country's case load. Prevalence rate /10000 was 0.44 with ANCDR /100000 of 5.46. ⁸

There are 30 districts in Karnataka – Bagalkote, Bangalore Rural, Bangalore Urban, Belgaum, Bellary, Bidar, Bijapur, Chamarajanagar, Chikballapur, Chikkamagaluru, Chitradurga, Dakshina Kannada, Davanagere, Dharwad, Gadag, Gulbarga, Hassan, Haveri, Kodagu, Kolar, Koppal, Mandya, Mysore, Raichur, Ramanagara, Shimoga, Tumkur, Yadgir, Udupi and Uttara Kannada. Karnataka achieved the goal of elimination of leprosy as a public health prob-

lem, defined as less than 1 case per 10,000 population, at the State level in the year 2005.⁷

Epidemiological Situation: Karnataka state- 2012-13⁸

- Out of the 30 districts in the state. PR of <1/10000 has been achieved by 29 districts and one district with PR of 1 to 2/10000 .
- At the end of March 2013, there were 2789 leprosy cases on record (under treatment).
- In 2012-13, total 3436 new leprosy cases were detected with ANCDR/ 100000 of 5.46
- Among the new cases detected in 2012-13, the proportions were- MB cases (57.97%) female (37.02%), children (15.63%) and grade II disability (3.29%).
- 3479 leprosy cases treated and discharged during the year 2012-13 .96.44% were released as cured after completing treatment.

Table 1: Important landmarks in India's journey toward leprosy elimination²

YEAR	LANDMARK
1871-72	Leprosy survey shows 108,000 cases
1898	Lepers Act enacted
1943	Dapsone introduced for treatment of leprosy
1955	National leprosy control programme started
1969-70	NLCP converted into a Centrally sponsored Programme
1971	Census recorded 3.2 million cases
1974-79	District/Zonal leprosy offices created during fifth five year plan
1976	Programme turned into performance oriented one and targets given to states
1981	A working group with M.S.Swaminathan as Chairman was formed to devise a new strategy and action plan for control and ultimate eradication of leprosy
1982	MDT introduced in the programme
1983-84	National Leprosy Eradication Programme started.3.2 million leprosy cases on record as of March 1984
1991	44 th World Health Assembly resolved elimination of leprosy as a public health problem by the year 2000 globally
1993-94	First World Bank Project on NLEP started
1995-99	WHO supplied MDT for free supply to all patients with support from SMHF/TNF
1996	All districts of the country covered MDT services
1997-98	First Modified Leprosy Elimination Programme conducted
1999-2000	Second Modified Leprosy Elimination Programme conducted
2000	NOVARTIS started supply of MDT free of cost through WHO and it is to continue till 2010
2000-01	Elimination of leprosy achieved globally in December 2000
2001-02	The second World Bank supported National Leprosy Elimination project started. Third MLEC conducted
2002	National Health Policy - 2002 set the goal of leprosy elimination at national level by the year 2005
2002-03	Fourth MLEC conducted
2003-04	Fifth MLEC conducted
2004	The second World Bank project ended in December 2004
2005	India achieved elimination of leprosy as a public health problem at national level in December 2005,when prevalence rate reached 0.95/10000 population

DISCUSSION

If we notice the progress of India from one of the endemic countries for leprosy to achievement of level of elimination at national level following from the important landmarks (Table 1).

In India 33 states have achieved the elimination of leprosy Karnataka state is one of the state to achieve elimination by 2005. Declining trend was seen in PR as well as ANCDR at country level. Prevalence rate of Karnataka state during the year 2011 - 12 remained less as compared to country level PR. Similarly declining trend was observed in ACDR.

Leprosy control is a long term activity. Therefore planning and programme management are essential ingredients. An important aspect of leprosy control is to assess impact of control operations on endemicity of the disease. Indicators are required for such evaluation. The Main / core indicators for monitoring progress include- 1) The number and rate of new cases detected per 1,00,000 population per year 2) Rate of new cases with grade 2 disability per 1,00,000 population per year 3) Treatment completion/ cure rate.¹

Although significant progress has been made in controlling the disease and reducing the case burden, much remains to be done in order to sustain the gains and further reduce the impact of the disease, especially burden due to physical, mental and socioeconomic consequences of leprosy on persons affected and their families. There is growing need to develop more effective tools and procedures for early recognition and management of leprosy reactions and nerve damage.¹

Most programmes need to initiate activities to improve the quality of life of persons affected by leprosy through prevention of disability and community based rehabilitation measures. One of the long term needs is to develop reliable diagnostic test for early diagnosis and an effective vaccine for prevention of leprosy.¹

In 1945, a follower of Mahatma Gandhi invited the great man to Tamil Nadu to inaugurate the facilities of new leprosarium, the Kasturba Kush-

tha Nivaran Nilayam. The Mahatma Gandhi had a busy schedule and could not travel just then. Nevertheless, he wrote back: "Get someone to open it; opening a hospital is not a big matter, but I shall come to close it." It was a cryptic, deeply meaningful message. In one sentence, he had blessed the hospital and its endeavour, and hoped to be around when it was no longer indeed, and when leprosy had been eradicated.² Sixty years after the Mahatma's death, his hopes and wishes have been, to a great extent, actualized. India has achieved elimination of leprosy as a public health problem, but it's been long tempestuous journey.²

The age-old stigma associated with the disease remains an obstacle to self-reporting and early treatment. The image of leprosy has to be changed at the global, national and local levels. A new environment, in which patients will not hesitate to come forward for diagnosis and treatment at any health facility, must be created.⁴

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